

REMARKS

I. Status of the Application

Claims 1-12 were originally filed in the present application.

Applicants herein amend claims 1, 6 and 12. Support for these amendments may be found throughout the specification, for example, at page 2, lines 19-31, and page 3, lines 1-5, among other places. Applicants also herein cancel claims 9-11 in order to further their business interests, yet without acquiescing to the Examiner's arguments. Applicants reserve the right to prosecute these or similar claims in the future.

As such, claims 1-8 and 12 are pending in the application.

II. Claim Objections

Amendments to the claims have rendered the Examiner's claim objections moot.

III. The Amended Claims are Definite and Supported by an Adequate Written Description

The Examiner made several rejections under 35 U.S.C. § 112. Applicants respectfully disagree with each rejection and address each rejection in the order presented. Amendments to the claims render each of the Examiner's arguments moot.

a) Claims 1-12 Are Supported by an Adequate Written Description

The Examiner rejected claims 1-12 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.¹ Specifically, the Examiner alleges that "All of the claims are directed to a generic mutant nematodes that have some generic alteration that either increases or decreases their sensitivity to desiccation stress"² and therefore "the claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

¹ Office Action mailed July 28, 2005, page 2.

² Office Action mailed July 28, 2005, page 3, lines 6-8.

application was filed, had possession of the claimed invention.³ Applicants respectfully disagree.

Nonetheless, in order to further their business interests, yet without acquiescing to the Examiner's arguments, Applicants have amended independent claim 1 to recite "mutant nematodes altered in an osmotic stress resistant (OSR-1) gene to reduce or increase sensitivity to osmotic desiccation stress", and further define the mutant nematodes as "comprising *C. elegans* and nematodes having an OSR-1 gene homologous to the OSR-1 gene of *C. elegans*." The specification supports OSR-1 mutants that have an increased resistance to osmotic desiccation stress relative to wild type.⁴

Furthermore, the Specification teaches, and one skilled in the art readily appreciates, that OSR-1 sequence taught by the present invention permit one to generate mutant OSR-1 homologous genes and nematodes harboring such genes.⁵ Additionally, the present invention teaches, and one skilled in the art readily appreciates, how to generate mutant nematodes with reduced or increased sensitivity to osmotic desiccation stress via altering (e.g., mutating) an OSR-1 homologous gene. Specifically, the present invention demonstrates how to generate a transgenic or mutant nematode that displays an altered phenotype (e.g., one that has enhanced or suppressed water stress tolerance) as compared to wild-type animals.⁶ In order to sustain the rejection, the Examiner needs to cite scientific evidence that shows that nematode OSR-1 homologues cannot reliably be altered to obtain the claimed subject matter.

One skilled in the art can readily identify homologous sequences based on the teachings of the specification. For example, using methods taught by the present invention (See, e.g., Specification at page 17 line 3 through page 19, line 4) as well as methods well known by those of skill in the art, Applicants identified OSR-1 homologues in multiple nematodes (e.g., *Strongyloides ratti*).⁷ One skilled in the art can readily mutate this gene per the teachings of the specification to achieve the claimed subject matter.

Thus, as amended, claim 1, and claims dependent thereon, are definite and supported by an adequate written description.

³ Office Action mailed July 28, 2005, pages 2-3, lines 27-28, 1-2, respectfully.

⁴ See, e.g., Specification at pages 82-83, lines 26-30 and 1-5, respectively, and FIG. 2C.

⁵ See, e.g., Specification at pages 17 line 3 through page 19, line 4, and page 45, lines 4-15.

⁶ See, e.g., Specification at page 59, lines 8-22. Furthermore, it would be reasonable for one of skill in the art to expect that an OSR-1 homolog present in a similar organism (e.g., a nematode) would behave the same as OSR-1 of *C. elegans*.

⁷ See Appendix I.

The Examiner rejected claim 12 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.⁸ Amendment to claim 12 renders the Examiner's arguments moot.

b) Claim 6, and Claims Dependent Thereon, Are Enabled

The Examiner rejected claims 6-11 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.⁹ Applicants respectfully disagree. Nonetheless, in order to further their business interests, yet without acquiescing to the Examiner's arguments, Applicants have amended independent claim 6. Amendments to claim 6 render the Examiner's arguments moot for the following reasons.

Claim 6 as amended claims a method of contacting a host organism comprising exposing the host to a composition comprising an isolated collection of mutant nematodes altered in an osmotic stress resistant (OSR-1) gene. The specification teaches that such a method finds use in multiple settings including research and therapeutic applications.¹⁰ The claim does not require any specific outcome (e.g., therapeutic outcome). Many methods of using the invention, such as research methods and drug screening methods,¹¹ may be applied. The claim only requires that an organism be contacted by the compositions of the present invention. There can be no dispute that the present invention enables "contacting." As discussed above, the specification describes useful methods that employ such contacting.

Thus, amended claim 6, and claims dependent thereon, contain subject matter described in the specification thereby enabling one skilled in the art to make and/or use the invention.

c) Claims 1-12 Particularly Point Out and Distinctly Claim the Subject Matter of the Invention

The Examiner rejected claims 1-12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as the invention. Applicants submit that amendments to the claims render the Examiner's arguments moot. Specifically, claim 1 has been amended to provide the relationship between

⁸ Office Action mailed July 28, 2005, page 2.

⁹ Office Action mailed July 28, 2005, page 7, lines 4-5.

¹⁰ See, e.g., Specification at page 59 line 30 through page 60 line 3.

¹¹ See, e.g., Specification at page 59 lines 23-29.

"mutant" and "altered" in that claim 1 claims "mutant nematodes altered in an osmotic stress resistant (OSR-1) gene to reduce or increase sensitivity to osmotic desiccation stress."¹² Furthermore, the terms "reduce" and "increase" are definite and supported by the Specification.¹²

Accordingly, it is respectfully submitted that claims 1, 6, and 12, and claims dependent thereon, are definite and supported by an adequate written description and that the Examiner's arguments are traversed or moot. Applicants respectfully request that the rejections under 35 U.S.C. § 112 be withdrawn.

IV. The Amended Claims are Not Anticipated

The Examiner rejected Claims 1, 3-6, and 8-10 under 35 U.S.C. §102(b) as allegedly being anticipated by Piggott et al. (Nematol 2 (5), 561-566 (2000)), Ogg et al. (Nature 389:994-999 (1997)) and O'Leary et al. (Fundam Appl Nematol 20(2):197-205 (1997)).

Claims 1 and 6 have been amended. As amended, claim 1 now claims a composition comprising an isolated collection of mutant nematodes altered in an osmotic stress resistant (OSR-1) gene to reduce or increase sensitivity to osmotic desiccation stress wherein the mutant nematodes comprise *C. elegans* and nematodes having an OSR-1 gene homologous to the OSR-1 gene of *C. elegans*. As amended, claim 6 now claims a method of contacting a host organism comprising exposing the host to the composition recited in claim 1. Applicants assert that, as amended, claims 1 and 6, and claims dependent thereon, are not anticipated by the prior art.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."¹³ The cited reference does not teach nor possess all of the elements of the claimed invention.

For example, Piggott et al. does not teach or disclose a composition comprising all elements of the present invention. Specifically, Piggott et al. does not teach mutant nematodes altered in an osmotic stress resistant (OSR-1) gene.

Similarly, Ogg et al. does not teach or disclose a composition comprising all elements of the present invention. Specifically, Ogg et al. does not teach mutant nematodes altered in an osmotic stress resistant (OSR-1) gene.

¹² See, e.g., Specification at pages 82-83, lines 26-30 and 1-5, respectively, and FIG. 2C.

¹³ *Verdegaal Bros. v Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Likewise, O'Leary et al. does not teach or disclose a composition comprising all elements of the present invention. Specifically, O'Leary et al. does not teach mutant nematodes altered in an osmotic stress resistant (OSR-1) gene.

Thus, amended claims 1 and 6, and claims dependent thereon, are not anticipated by the prior art. Applicants respectfully request that rejections under 35 U.S.C. § 102(b) be withdrawn.

V. The Claims are Not Obvious

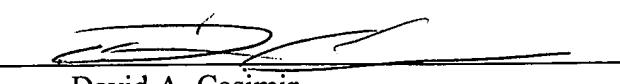
The Examiner rejected Claims 6 and 7 under 35 U.S.C. § 103(a) as allegedly being unpatentable over O'Leary et al. (Fundam Appl Nematol 20(2):197-205 (1997)). Applicants respectfully disagree.

In particular, O'Leary et al. does not teach mutant nematodes altered in an osmotic stress resistant (OSR-1) gene. Furthermore, O'Leary et al. does not teach the contacting of a host organism (e.g., a plant) with a composition comprising mutant nematodes altered in an osmotic stress resistant (OSR-1) gene. Thus, the cited references, alone or in combination, do not disclose all elements of the present invention. Accordingly, the invention is not *prima facie* obvious over the cited reference. Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that Applicants have addressed all grounds for rejection and Applicants' claims should be passed to allowance. Reconsideration of the application is respectfully requested. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, Applicants encourages the Examiner to call the undersigned collect at (608) 218-6900.

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